

I CLAIM:

1. A cooling system for a gantry of a computer tomography system with an x-ray source being positioned on a gantry mounted for rotation on a rotational axis in a gantry housing which is mounted on a stationary part for movement by at least one bearing, the cooling system comprising a cooling gas supply device for directing a cooling gas flow in the region of the at least one bearing between the gantry housing and the stationary part.
2. A cooling system according to claim 1, wherein the gantry housing is mounted for pivotable movement on a pivot axis by means of two coaxial pivot bearings provided on opposite sides of the stationary part of the computer tomography system, the gas supply device creating a flow of cooling gas into the gantry housing in the region of the first of the two pivot bearings, through the gantry housing and out from the gantry housing in the region of the second of the two pivot bearings into the stationary part.
3. A cooling system according to claim 2, wherein the cooling gas flow is a closed cooling gas flow circuit.
4. A cooling system according to claim 1, which includes an outflow opening in the stationary part of the computer tomography system through which the cooling gas flows out of the stationary part after flowing through the gantry housing.
5. A cooling system according to claim 1, wherein the gantry housing is positioned so that it can be pivoted on a pivot axis by means of two coaxial pivot bearings on opposite sides of the stationary part of the tomography system, the cooling gas supply device creating a cooling gas flow into the gantry housing in the region of at least one of the pivot bearings and escapes through at least one outflow opening in the gantry housing.
6. A cooling system according to claim 5, wherein the cooling system device is constructed so that the cooling gas flows into the gantry housing in the region of both pivot bearings.

7. A cooling system according to claim 1, wherein the cooling gas flow comprises an air flow drawn in from outside of the computer tomography system through at least one inflow opening.

8. A cooling system according to claim 1, wherein the cooling gas supply device comprises at least one blower.

9. A cooling system according to claim 8, wherein the blower is located in the stationary part of the computer tomography system.

10. A cooling system according to claim 1, wherein at least one bearing has a flow-through opening running lengthwise through the bearing, through which the cooling gas flows between the stationary part and the gantry housing.

11. A cooling system according to claim 1, wherein the gantry housing and the housing of the stationary part have aligned flow-through openings at least in surfaces arranged adjacent to one of the bearings, through which the cooling gas flows between the stationary part and the gantry housing.

12. A cooling system according to claim 11, which includes seals mounted around the flow-through openings between the gantry housing and the stationary part.

13. A cooling system according to claim 1, which includes at least one heat exchanger arranged in the cooling gas flow to cool the cooling gas.

14. A cooling system according to claim 13, wherein the heat exchanger is arranged in the stationary part.

15. A cooling system according to claim 1, wherein guide means selected from guide surfaces and guide channels are arranged inside the gantry housing.

16. A computer tomography system having a gantry with an x-ray source being positioned in a gantry housing for rotation around a rotational axis, the gantry housing being positioned in a stationary part of the computer tomography system by at least one bearing, a cooling system including a cooling gas supply device for directing a cooling gas flow in the region of the at least one bearing from between the stationary part and the gantry housing.

17. A method for cooling a gantry of a computer tomography system which has an x-ray source mounted thereon and is positioned in a gantry housing for rotation around a rotating axis in the gantry housing, said gantry housing being positioned in a stationary part of the computer tomography system so that it can be moved by at least one bearing, said method comprising creating a cooling gas flow and directing the gas flow between the stationary part and the gantry housing for cooling the gantry.

18. A method according to claim 17, wherein the gantry housing is positioned so that it can be pivoted on a pivot axis by means of two coaxial pivot bearings on opposite sides of the stationary part of the computer tomography system and the method includes creating the cooling gas flow in the region of the pivot bearings into the gantry housing, through the gantry housing and then out of the gantry housing in the region of the second pivot bearing.

19. A method according to claim 17, wherein the step of directing the cooling gas flow directs the flow in a closed circuit.

20. A method according to claim 17, wherein a cooling gas flow includes directing the flow out of the computer tomography system after the flow has passed through the gantry housing.

21. A method according to claim 17, wherein the gantry housing is positioned so that it can be pivoted on a pivot axis by means of a first and second coaxial pivot bearing on opposite sides of the stationary part of the computer tomography system, the step of directing the cooling gas directs the cooling gas into the gantry housing in the region of at

least one of the pivot bearings and dissipates the cooling gas into the surroundings through at least one outflow opening arranged in the gantry housing.

22. A method according to claim 17, wherein the step of directing a cooling gas includes cooling the cooling gas by directing it through at least one heat exchanger.